

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER



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basic imagery interpretation report

Activity at Severodvinsk Shipyard Complex

1 January [redacted] (S)

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STRATEGIC WEAPONS INDUSTRIAL FACILITIES

BE: Various

USSR

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INSTALLATION OR ACTIVITY NAME					COUNTRY
Activity at Severodvinsk Shipyard Complex, 1 January - [redacted]					UR
UTM COORDINATES See below	GEOGRAPHIC COORDINATES See below	CATEGORY See below	BE NO. See below	COMIREX NO. See below	NIETB NO.
MAP REFERENCE					

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SAC. USATC, Series 200, Sheet 0092-22, scale 1:200,000

LATEST IMAGERY USED [redacted]	NEGATION DATE (If required) NA
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Installation	Geographic Coordinates	Category	BE No	Comirex No (MRN) No	NIETB
Shipyard 402	64-34-38N 039-48-32E				
Shipyard Yagry	64-35-14N				
Island	039-49-07E				
Nuclear Submarine	64-34-45N				
Special Support Facility	039-47-16E				
Naval Base West	64-34-20N 039-45-51E				

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ABSTRACT

1. (S/D) This report describes significant activity observed at the Severodvinsk Shipyard Complex in the USSR from 1 January through [redacted] the information cutoff date of this report. All usable satellite imagery of the complex acquired during this period was used in the preparation of this report.

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2. (TSR) Significant events that have occurred at this complex since the previous activity report include the completion of fitting-out of D-III nuclear-powered ballistic missile submarine (SSBN) unit 11; the roll-out of D-III SSBN unit 12; and the roll-out, launching, and fitting-out of a nuclear-powered cruise-missile submarine (SSGN) — NPIC Interim Designator 402U.

3. (S/D) This report contains a plan of the Severodvinsk Complex, 21 annotated photographs, and a table of submarine activity. The plan of the complex shows the major structures and reporting positions, and the table outlines the movement of all submarines at the complex, with the exception of the inactive units at Naval Base West.

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BASIC DESCRIPTION

4. (S) The Severodvinsk Shipyard Complex (Figure 1) comprises four installations—Shipyard 402, Shipyard Yagry Island, the Nuclear Submarine Special Support Facility (NSSSF), and Naval Base West. Reporting positions (RPs) used throughout this report and the submarine movements are shown in Table 1 and keyed to Figure 1.

Shipyard 402

5. (S/D) For ease of reporting, discussion, and visual aids, the launch rails in front of construction hall 3 are designated launch rails 1, 2, and 3, with rail 1 being the northernmost rail (Figure 1).

D-Series Activity

6. (S/D) By [] six flotation devices had been attached to each side of D-III SSBN unit 11 and the launch basin had been partially flooded. By [] the submarine had been launched and positioned at RP 26 where fitting-out was continuing through at least []. Indications of the late stage of fitting-out was observed on [] when the scaffolding had been removed from atop the sail. By [] the cover had been removed from the two forwardmost missile tubes, and on [] the covers had been removed from the entire missile bay. By [] the submarine had been moved to the de-perming pier, which has previously indicated that sea trials would occur in the immediate future. By [] D-III SSBN unit 11 had been repositioned at the main quay and appeared to be ready for sea at the end of this reporting period.

7. (S/D) Initial launch preparations were observed along launch rail D on [redacted] when snow and ice had been cleared from the rails. By [redacted] 12 flotation device supports (which were used during the launch of D-III SSBN unit 11 from launch rail C) had been aligned along each side of launch rail D. The roll-out of D-III

SSBN unit 12 was thought to be imminent on [redacted] when snow and ice had again been cleared from rail D. However, on [redacted] the flotation device supports had been moved directly onto rails C and D (Figure 2), and on [redacted] snow and ice were being cleared along each side of launch rail D. By [redacted] the flotation device supports had been realigned along rail D and the area again appeared to be ready for the roll-out of a submarine. On [redacted] a probable railroad track cleaner was in operation (Figure 3) on the rails and the roll-out of a submarine was again thought to be imminent. However, on [redacted] the barge with the flotation devices (required for the launch of a submarine) had been moved to the east quay, suggesting that the roll-out/launch of D-III SSBN unit 12 might be further delayed. By [redacted] cables had been strung-out from the winch house to the doors of construction hall 1, indicating that the roll-out of D-III SSBN unit 12 was again imminent. D-III SSBN unit 12 was finally rolled-out of construction hall 1 on launch rail D between [redacted] (Figure 4). The sail and missile-bay area of the submarine was covered in the same manner as on previous launches, precluding analysis of any possible change in the number and size of missile tubes.

SSBN Components

8. (S/D) Numerous pieces of submarine outer hull plating were observed throughout the shipyard. On [] a D-series outer hull keel section was observed on a railcar in the staging area behind construction hall 1. On [], the keel section was on the rail line south of the launch basin, and on [] it was at the entrance to the sandblasting building behind construction hall 1. This keel section was probably intended for D-III SSBN unit 12; however, its presence may indicate a continuation of the D-III SSBN construction program beyond hull 12.

9. (TSR) On [redacted] a four-hole internal missile-bay deck plate for an SSBN was on a railcar in the staging area behind construction

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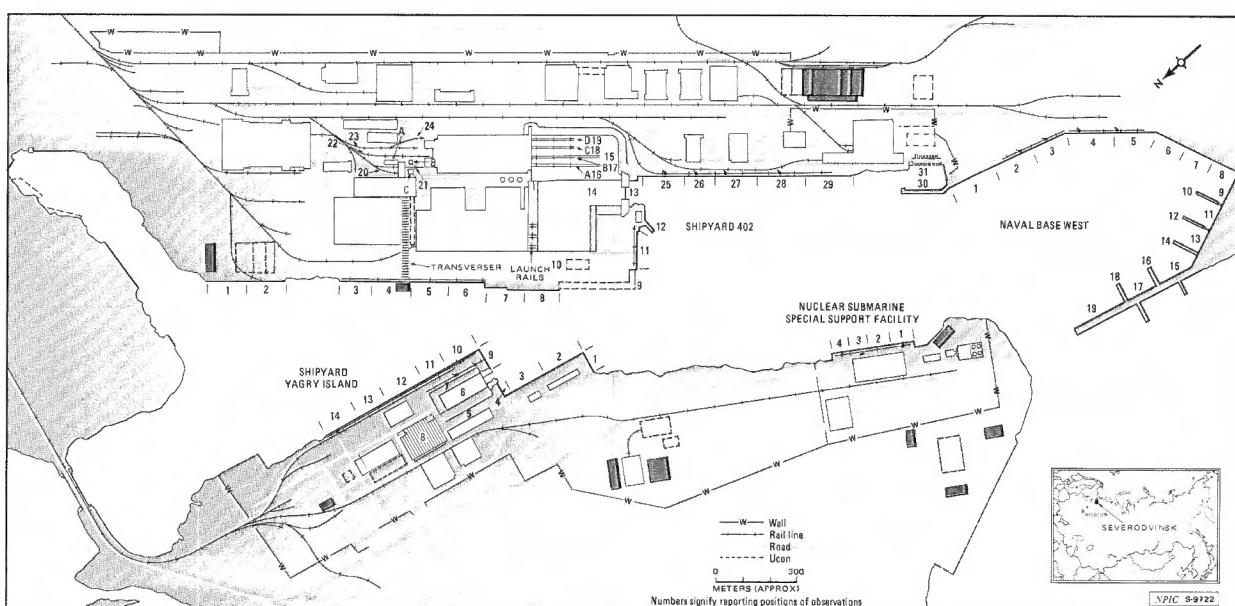


FIGURE 1. LAYOUT OF SEVERODVINSK COMPLEX, USSR

Table 1. Submarine Activity, 7 January - 31 May 1990 (Stations keyed to Figure 1).
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hall 1 (Figure 5). The plate was [redacted] with four [redacted] holes spaced in a rectangular arrangement [redacted] meters wide from center-to-center. These dimensions are comparable to those of SSBN plates reported in September and October 1977,¹ which were believed to be for the Typhoon SSBN. On [redacted] and possibly on [redacted], the four-hole plate was on the railspur adjacent to the sandblasting building. This railspur extends into the southeast side of construction hall 1 and also serves the sandblasting building. The four-hole plate is believed to have subsequently been transferred into the sandblasting building and not into construction hall 1. The movement of this plate from the staging area to the sandblasting building parallels the movement of the two-and four-hole plates identified in September 1977.¹ After sandblasting, the two- and four-hole plates observed at that time were on the railspur extending into construction hall 3.

10. (S/D) A submarine outer hull bow section, a possible bow sonar foundation, a section of outer missile-bay deck plate (with [redacted] cutouts), and a high count of probably six pressure hull sections (underneath the staging sheds) were at the shipyard. The location of these components indicated that they were associated with construction hall 1. Two hull sections and an unidentified component were underneath the rigid framework behind construction hall 3 throughout most of the period. On [redacted] the transverser carriage was aligned with the loading rail into construction hall 3; however, no hull section movements were observed. On [redacted] a hull section was situated on the transverser carriage near fabrication building 1. Imagery of poor interpretability precluded mensuration; however, on [redacted] probably this same hull section was on one of the staging platforms and was [redacted] in diameter. Also, mensuration of the [redacted] imagery revealed that the second hull section was [redacted] in diameter, and the unidentified component (possibly a cover over a hull section) was [redacted] meters. By [redacted] roof panels and a back wall were being installed on the rigid framework over

the staging platforms (Figure 6). When completed, the analysis and mensuration of hull sections and components associated with construction hall 3 and fabrication building 2 will be severely limited.

11. (S/D) On [redacted] two probable missile tube covers were observed on railcars near RP 22. The covers were approximately [redacted] [redacted] and similar in shape to previously identified new-type missile tube covers which are slightly larger than the covers associated with the SS-N-18 missile tubes.² On [redacted] a 19-meter railcar, similar to the 19-meter railcar associated with launch facility D at Nenoksa Naval Missile Test Center [redacted]³, was on the railspur extending into the southeast end of construction hall 3 (Figure 7). The sighting of this 19-meter railcar adjacent to construction hall 3 further substantiates the belief that at least one and probably two Typhoon SSBNs remain under construction in hall 3.

Y-Series Activity

12. (S/D) No operational Y-class SSBNs were observed at Shipyard 402 during this reporting period.

13. (S/D) By [redacted] the Y-class nuclear-powered attack submarine (SSN) which was dismantled at Shipyard Yagry Island during the previous reporting period⁴ had been positioned outboard a floating workshop (YR) at RP 25 (Figures 8 and 9). By [redacted] several outer hull plates had been removed from the submarine and possible reactor access shed strongbacks were in place aft of the sail. Unidentified work was ongoing in the reactor areas throughout the remainder of this reporting period.

Other Submarine Activity

14. (TSR) The long awaited launch of the Typhoon SSBN was thought to be forthcoming when an operational test of the launch dock was observed on [redacted]. The launch dock was ob-

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served outside the launch basin alongside the pillar-supported platforms adjacent to the deperming pier (Figure 9). By [] the launch dock had been repositioned in front of construction hall 3 where launch preparations continued through []. A large new-class submarine (NPIC Interim Designator 402U) had been rolled-out of construction hall 3 on launch rail 1 (Figure 10). Analysis of all available imagery since [] indicates that this submarine is an SSGN and not the Typhoon SSBN which is believed to be under construction in construction hall 3.

15. (TSR) Launching of the 402U had begun on [] when the launch dock was being maneuvered into the deep water portion of the basin (Figure 3). By [] the launching process had been completed with the 402U positioned alongside the main fitting-out quay at RP 28 (Figure 11) and the launch dock repositioned in front of construction hall 3 (Figure 12). Fitting-out of the 402U was continuing at the end of this reporting period. The 402U is [] meters in length, measured from the bow to the center of the covering over the screws, and has a beam of approximately []. Mensuration of the 402U while it was still in the launch dock and analysis of the dollies after the submarine was launched indicate that the hull of the submarine is elliptical in shape with a vertical height of approximately [] measured from the center of the dollies to the walking deck immediately forward of the sail. On [] a rectangular opening, [], was observed in the outer deck plate aft of the sail (Figure 11).

16. (TSR) On [] an SS-NX-19 loading tray—similar to the loading tray previously seen at Nenoksa Missile Test Center Launch Facility A [] and also near the cruise missile popup barge at Balaklava Submarine Base and Ship Repair Yard []—was on the quay next to the 402U (Figure 11). This was the first indication that the submarine would probably be equipped with the SS-NX-19 cruise missile currently under development at Ne-

noksa. Additional evidence supporting the cruise missile armament was observed on [] when a [] possible missile-bay outer door plate was open on the port inside aft of the sail. The possible outer door plate remained open on [] and was not observed on the submarine on [] when a similar plate [] meters was observed slightly forward of the sail on the port side (Figure 13). Additional analysis of these possible outer door plates is required before a positive identification of the door arrangement on the submarine can be determined. An unidentified object on the quay on [] (Figure 13) could be the possible outer door plate observed aft of the sail on []. If so, this object could equate to a portion of the [] covering observed alongside both sides of the sail of the submarine; the door configuration has not been determined. On [] May, one of the SS-NX-19 loading trays was in a forward missile tube on the port side of the sail (Figure 14). [] at least eight missile tubes were observed in the starboard missile bay area of the submarine, and the angle of the loading tray was approximately [] degrees. The missile tubes were [] in diameter and were spaced [] apart, center-to-center. The number of possible missile tube outer door plates that were open could not be determined; however, the forwardmost plate was [] in length. Analysis of the covered area on the bow of the submarine has not yet been possible; however, the possibility that this area may house an antisubmarine warfare (ASW) weapons system cannot be discounted.

17. (S/D) Between [] and [] a SSN unit 5 had been positioned inside the floating drydock—ARD(D)—at RP 29 (Figure 15). The submarine remained in the ARD(D) with unidentified topside activity in progress between the bow and sail.

18. (S/D) Numerous pieces of submarine outer hull plating and partial outer hull sections were dispersed throughout the shipyard. Other than the highly reflective outer hull plating in the vicinity of construction hall 2 which are associ-

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ated with the A SSN program, these outer hull plates and hull sections cannot be associated with a particular submarine construction program. On [redacted] two outer hull sections were on the rail line adjacent to RP 25 (Figure 16). The hull sections were approximately [redacted] in length with a chord of approximately [redacted] at one end and tapered to a chord of [redacted] at the opposite end. At least four outer hull sections with approximately the same dimensions were in an open storage area at the northeastern end of the shipyard during the latter part of this reporting period (Figure 17). On [redacted] a heavily framed possible submarine bulkhead approximately 9 meters in diameter was on the loading rail at the back of construction hall 1 (Figure 18). On [redacted] three possible submarine reactor vault components were in the open storage area behind fabrication building 2 (Figure 19). The components were approximately [redacted] with a height of approximately [redacted] at the open end which tapered to a height of [redacted] at the opposite end. The heavy framing, dimensions, and general appearance of these components are quite similar to that of the probable reactor vault side section identified at Komsmolsk Shipyard Amur 199 [redacted] between January and early April 1980.⁵

19. (S/D) Y/D-series reactor compartment deck components and a reactor component similar to the two reactor components seen in the hull section staging area in August 1978,² were on the north side of fabrication building 2.

Construction Activity

20. (S/D) Extensive construction activity was continuing in the shipyard. In addition to the continued construction on the quays and support buildings at RPs 1, 2, and 9–11, new and improved quays were under construction at the northeast end of the shipyard across the inlet from the powerplant. No operational submarines or surface combatants have yet been observed in this area; however, these facilities could be ready for berthing in the near future.

21. (S/D) Erection of one of the two large cranes at RPs 9–11 was completed by early January; at the end of this reporting period, it was being used in the erection of the second crane and construction of the quay. Two smaller cranes were being erected on the transverser system adjacent to RP 4. Construction was continuing on the new facilities perpendicular to the quays at RPs 1 and 2, and the large multibay fabrication building outside the security fence south of construction hall 2. Construction of two additional support buildings adjacent to construction hall 2 was begun and both buildings remained in the early stage of construction. A probable administration wing connecting two large fabrication buildings southeast of the launch basin was under construction and excavation for a probable support building behind fabrication building 2 was begun.

22. (S/D) Unidentified work was in progress on the submarine launched ballistic missile test/training tower at the northeast end of the shipyard throughout this reporting period (Figure 20). On [redacted] the tower door was open and three cylindrical objects with a diameter of [redacted] meters and a height of [redacted] were next to the tower. On [redacted] a possible inverted missile tube cap [redacted] in diameter was on the ground next to the tower. No significant movement or replacement of these components was observed.

Shipyard Yagry Island

23. (S/D) Analysis of imagery since the previous reporting period indicates that the D-I SSBN in the center of the ship-lifting basin on [redacted] had been placed in the north bay of repair hall 1 by [redacted]. Overhaul and refueling were continuing throughout this reporting period. Between [redacted] the D-I SSBN that had been undergoing preliminary overhaul and refueling work at the NSSF since late September was placed in the north bay of repair hall 2. Overhaul and refueling of this D-I SSBN, which is the second D-I SSBN to undergo a major overhaul and refueling, were continuing.

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24. (S/D) The Y-I SSBN that had been in the north bay of repair hall 2 since October 1978 was removed between [redacted]

[redacted] The submarine remained on the north ledge of the ship-lifting basin through [redacted] [redacted] had been positioned outboard a YR at RP 2. Post-overhaul fitting-out was continuing through [redacted] except for [redacted] when the submarine was near the calibration facility at Shipyard 402 where it probably underwent deperming. The decrease in the number of SS-N-6 ballast cans in the open storage area on [redacted] indicated that overhaul and refueling of the Y-I SSBN had probably been completed. By [redacted] the submarine had departed the Severodvinsk Complex for sea trials/redeployment to its North Fleet operating base.

25. (S/D) The Y-I SSBN undergoing preliminary overhaul work at the NSSSF during the previous reporting period was placed in the south bay of repair hall 2 between [redacted] [redacted] where its overhaul and refueling was continuing. As of [redacted] occupancy of the repair hall is as follows:

Repair hall/position Occupied by	Since
No 1/north bay	D-I SSBN
No 1/south bay	Y-I SSBN
No 2/north bay	D-I SSBN
No 2/south bay	Y-I SSBN

26. (S/D) By [redacted] the dismantled Y-class SSN (unit 4) which was on the north ledge of the ship-lifting basin during the previous reporting period had been removed from the basin and positioned at the main quay at Shipyard 402 (Figure 8). Dismantling of the missile-bay section of this submarine was continuing on the north ledge of the ship-lifting basin at Shipyard Yagry Island (Figure 21) through at least [redacted] and appeared to have been completed by [redacted] ruary. Dismantled Y-class SSN units 1 and 2 remained at the main quay at Shipyard Yagry Island. Some minor topside activity was observed atop the sail and in the area of the very low frequency buoy housing. A Zeya YRSN was out-

board the two submarines; however, no reactor work or major reconstruction activity was observed.

27. (TSR) Post-overhaul/conversion fitting-out of the 402T was continuing. On [redacted] two cutouts, [redacted] in length and spaced [redacted] meters apart, were on the port side of the hull aft of the sail. By [redacted] an additional probable cutout was on the port side, forward of the sail. The purpose of the cutouts has not been determined; however, their length and spacing along the hull do not equate to that of the blast deflectors on the E-II SSGN. On imagery of [redacted] the cutouts were not discernible. By [redacted] the reactor access opening had been plated over, and between [redacted] and the end of this reporting period, the 402T was on the south ledge of the ship-lifting basin with scaffolding around the aft control surfaces and propellers. Unidentified topside activity was continuing, however, no missile tubes, doors, or blast deflectors have yet been observed.

28. (S/D) Overhaul and repairs on the two E-II SSGNs were continuing. Reactor and topside work was still in progress, and there was no indication that reinstallation of missile tubes had begun. Upkeep and minor repairs were performed on at least two W-class attack submarines during this reporting period.

29. (S/D) The newly constructed V-III SSN that had been fitting-out at the NSSSF since at least [redacted] was on the north ledge of the ship-lifting basin between [redacted] [redacted] probably for minor maintenance and adjustments. On [redacted] the submarine was moored in the center of the basin and, by [redacted] had returned to its previous fitting-out position at the NSSSF.

30. (S/D) No change was observed on the A-class SSN aft control surface and the 402K mid-section. Repairs to the [redacted] floating target barge (YGTN) equipped with the SIDE NET radar was completed between [redacted]

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this YGTN was outboard the ARD(D) at RP 14. By [] the SIDE NET-equipped YGTN had been returned to Naval Base West and, by [] [] had departed the Severodvinsk Complex. On [] the YGTN was observed in the inlet approximately 1 nautical mile north of Rosta Naval Base and Ship Repair Yard Sevmorput []

31. (S/D) During this reporting period, construction was continuing on repair hall 3, in the fenced area west of the shipyard (two additional buildings were under construction), on the support building adjacent to the powerplant, and on an additional support building between the powerplant and repair hall 2. Additional pilings continued to be emplaced along the floor of repair hall 3; however, the overall length of the hall cannot yet be determined, and no footings for the main structural upright supports were observed. A slotted opening in the floor of the building aligned with the door of repair hall 2 suggest that a door will be constructed in this area.

Nuclear Submarine Special Support Facility

32. (S/D) Overhaul and refueling of the P-class SSGN at RP 2 is continuing. An environmental cover was still over the reactor area aft of the sail and several missile tube doors have been observed in the open position.

33. (S/D) Fitting-out of the V-III SSN continued at RP []

[] this submarine was on the north ledge of the ship-lifting basin at Shipyard Yagry Island. By [] the V-III SSN had returned to RP 1 where additional fitting-out was continuing through at least []. May, the submarine was at the calibration facility at Shipyard 402. On [] the submarine was oriented on an east/west heading and moored to the calibration pier. On [] the submarine was oriented in a north/south direction in the stream adjacent to the calibration pier. A possible

V-III SSN was observed offshore from the Severodvinsk Complex on []. The submarine was probably engaged in sea trials and should be ready for operational deployment in the near future. However, on [] the submarine was again at RP 1 with the scaffolding in place atop the teardrop-shaped pod. The scaffolding was also in place over the pod on [] [] when the V-III was at the calibration facility.

34. (S/D) The stern section of the A-class SSN remained at the area west of the quay with no significant activity observed. Construction was continuing on the waste treatment plant northwest of the facility.

Naval Base West

35. (S/D) No significant activity was observed on the [] submersible. Erection of the large traveling crane at RP 7 was completed and movement of the crane along the quay and movement of the machinery/hoist housing along the support arms was observed (Figure 22). Construction of the quay extension was continuing.

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REFERENCES

IMAGERY

(TSR) All usable KEYHOLE imagery acquired from [redacted] was used in the preparation of this report. The [redacted] imagery provided the most recent usable coverage and coincides with the information cutoff date of this report.

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MAPS OR CHARTS

SAC. US Air Target Chart, Series 200, Sheet 0092-22, scale 1:200,000 (UNCLASSIFIED)

DOCUMENTS

1. NPIC. [redacted] RCA-09/0006/78, *Activity at Severodvinsk Shipyard Complex, 27 November 1976 - 31 January 1978 (TSR)*, May 78 (TOP SECRET) [redacted]
2. NPIC. [redacted] IAR-0111/79, *Typhoon SSBN Construction at Severodvinsk Shipyard 402, USSR (TSR)*, Jan 80 (TOP SECRET) [redacted]
3. NPIC. [redacted] RCA-17/0001/80, *Activity and Developments at Nenoksa Naval Missile Test Center, April 1978 - October 1979 (S)*, Apr 80 (TOP SECRET) [redacted]
4. NPIC. [redacted] RCA-09/0001/80, *Activity at Severodvinsk Complex, 1 August - 31 December 1979 (S)*, Mar 80 (TOP SECRET) [redacted]
5. NPIC. [redacted] IAR-0045/80, *Vault Components for New-Generation Submarine Reactors, USSR (S)*, Apr 80 (TOP SECRET) [redacted]

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*Extracted material is classified TOP SECRET R.

REQUIREMENT

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(S) Comments and queries regarding this report are welcome. They may be directed to [redacted] Soviet Strategic Forces Division, Imagery Exploitation Group, NPIC, [redacted]

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